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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,249	05/20/2002	Gilad Kirshenboim	12816-017001	2280

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EXAMINER	
NGUYEN, SON XUAN	

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/869,249	KIRSHENBOIM ET AL.	
	Examiner	Art Unit	
	SON X. NGUYEN	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *20 May 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 May 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/24/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-9, 11-13, 18-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Frankel at el. (U.S 6,639,913) hereinafter referred to as Frankel.

Regarding claim 1, Frankel discloses data transmission network **(See lines 15-20 of column 4)** having a least one line termination device **(Host Digital Terminal HDT 200 of Fig. 1 corresponds to line termination device)** connected via a data transmission medium **(DSL 24 of Fig. 1)** to several network termination devices **(Remote Digital Terminal RDT 100 of Fig. 1 corresponds**

to network termination device; See lines 64-65 of column 6), each network termination device comprising a request message generator **(RDT 100 sends request message to HDT 200; RDT 100 inherently contain request message generator; See lines 13-16 of column 9 or step 410 of Fig. 5)** for generating a data transmission request message when a data communication device **(Telephone Devices TD 10 and LAN 12 of Fig. 1 corresponds to data communication device)** connected to the network termination device is sending data **(Telephone device initiates a call when it is connected to RDT 100; See lines 7-9 of column 9)**; and an xDSL transceiver **(DSL MODEM 120 of Fig. 2)** for transmitting an upstream data frame **(DSL MODEM 120 formats the modulated information into a suitable packet format such as ATM protocol; See lines 54-56 of column 5)** including the generated request message via the data transmission medium to the line termination device;

Said line termination device comprising a selection unit for selecting network termination devices **(HDT 200 identifies the source of sending request message by looking at address provided in packet request; See lines 16-19 of column 9 or step 415 of Fig. 5)** which have sent a request message depending on stored status information data of the network termination devices; a grant message generator **(HDT 200 generates voice-band packet and transmits to RDT 100)** for generating data transmission grant messages for the selected network termination devices; and an xDSL transceiver **(LPN IF 270 in Fig. 3 transmits and receives ATM cells to and from RDT 100 through LPN interface. LPN IF 270 inherently contains xDSL transceiver which**

formats information into a suitable packet format such as ATM; See lines 18-23 of column 7 and lines 54-56 of column 5) for broadcasting downstream data frames including the generated grant messages via the data transmission medium to the network termination devices.

Regarding claim 2, Frankel discloses the transmission medium is a telephone line **(DSL 24 is a standard twisted wire pair line; See lines 4-7 of column 5)**.

Regarding claim 3, Frankel discloses a data transmission request message comprises a request message opcode **(off-hook or dial tone; See lines 46-47 of column 2)** and a number of time slots required for data transmission of the data sent by the data communication device **(Available bandwidth is required to send request message. Otherwise request message can not be sent; See lines 61-63 of column 8)**.

Regarding claim 4, Frankel discloses a data transmission grant message comprises a grant message opcode, and an address of the selected network termination device **(HDT 200 transmits dial tone to RDT 100; See 30-31 of column 9)**.

Regarding claim 5, Frankel discloses the upstream data frames are sent from the network termination devices to the line termination device via the data transmission medium in an upstream frequency band, and the downstream data frames are sent from the line termination device to the network termination device via the data transmission medium in a downstream frequency band **(See Fig. 6 and 7)**.

Regarding claim 6, Frankel discloses the downstream frequency band ranges between 1 and 3 MHz and the upstream frequency band ranges between 4 and 8 MHz **(DSL is a high bandwidth technology that enables data to be transferred at various speeds; See lines 50 –52 of column 1)**.

Regarding claim 7, Frankel discloses each line termination device comprises an MII interface **(PSTN T1-IF 260 of Fig. 3)** for the connection to a switch **(PSTN Switch 32 of Fig. 1)**.

Regarding claim 8, Frankel discloses each data frame comprises: a synchronization data field, a message data field, a payload data field, and an error correction data field **(Each frame inherently contains header, payload and CRC field which is well known in art)**.

Regarding claim 9, Frankel discloses each network termination device is connected to a passive signal splitter **(SPLITTER/COMBINER 630 of Fig. 8)**.

Regarding claim 11, Frankel discloses the line termination device comprises storing means **(Memory 250 of Fig. 3 contains information of multiple RDTs 100; See lines 1-5 of column 8)** for storing the status information data of the different network termination devices connected to the line termination device.

Regarding claim 12, Frankel discloses the storing means stores the addresses of the network termination devices and the corresponding numbers of the required time slots received from the network termination devices in request messages **(A software program stored in Memory 250 contain address of the network termination devices and bandwidth requirements to supports**

communication with multiple RDTs 100 simultaneously; See lines 1-5 of column 8).

Regarding claim 13, Frankel discloses the selection unit reads the status information data stored in the storing means, selects the network termination devices for data transmission according to a programmed selection algorithm and activates the grant message generator for generating grant messages for the selected network termination devices **(See lines 13-19 and 29-31 of column 9 and Fig. 5)**.

Regarding claim 18, Frankel discloses the network termination device comprises a grant decoder **(CODEC 160 of Fig. 2)** for decoding messages within downstream data frames broadcasted by the line termination device **(See lines 3-5 of column 9)**.

Regarding claim 19, Frankel discloses the xDSL transceivers are VDSL transceivers **(VDSL transceiver is used to transfer data at high speed such as 2Mbps; See lines 50 –52 of column 1)**.

Regarding claim 20, Frankel discloses the impedances of the network termination devices connected to the data transmission medium are balanced (it is inherently understood that the impedances of the network termination devices connected to the data transmission medium must be balanced in order to transfer data between network termination devices and the transmission medium).

Regarding claim 21, Frankel discloses eight network termination devices are connected via the data transmission medium to the line termination device

(HDT 200 support communication with multiple RDTs 100; See lines 1-5 of column 8).

Regarding claim 22, Frankel discloses several line termination devices are connected to a switch **(A switch inherently contains many interface devices which are connected to several HDTs 200)**.

Regarding claim 23, Frankel discloses the switch is connected to an IP backbone **(Data network in Fig. 1)**.

Regarding claim 24, Frankel discloses a method for data transmission **(See Fig. 4 and Fig. 5)** comprising the following steps: generating a data transmission request message by a network termination device when the network termination device receives data from a connected data communication device **(See lines 50-56 of column 8; Step 310 of Fig. 4)**; transmitting the generated data transmission request message within an upstream data frame via a data transmission medium to a line termination device **(See lines 54-61 of column 8; step 315 of Fig. 4)**; selecting the network termination devices depending on stored status information data of the network termination devices **(See lines 16-19 of column 9; Step 415 of Fig. 5)**; generating data transmission grant messages for the selected network termination devices by the line termination device **and** broadcasting downstream data frames containing the generated grant messages via the data transmission medium to the connected network termination devices **(See lines 26-29 of column 9; Step 430 of Fig. 5)**; transmitting data from the selected network termination device after the grant message has been decoded **(See lines 29-31 of column 9; Step 435 of Fig. 5)**.

Regarding claim 25, Frankel discloses line termination device **(HDT 200 of Fig. 1)** comprising a selection unit **(HDT 200 identifies the source of sending request message by looking at address provide in packet request; See lines 16-19 of column 9 or step 415 of Fig. 5)** for selecting a network termination device **(RDT 100 of Fig. 1)** from a group of network termination devices connected to the line termination device in response to a request message depending on stored status information data of the network termination devices; a grant message generator **(HDT 200 generates voice-band packet and transmits to RDT 100)** for generating data transmission grant messages for the selected network termination device, and an xDSL transceiver **(LPN IF 270 in Fig. 3 transmits and receives ATM cells to and from RDT 100 through LPN interface. LPN IF 270 inherently contains xDSL transceiver which formats information into a suitable packet format such as ATM; See lines 18-23 of column 7 and lines 54-56 of column 5)** for broadcasting downstream data frames including the generated grant messages via a data transmission medium **(Medium 26 and 24 of Fig. 1)** to the network termination devices.

Regarding claim 26, Frankel discloses network termination device **(RDT 100 of Fig. 1)** comprising a request message generator **(RDT 100 sends request message to HDT 200; RDT 100 inherently contain request message generator; See lines 13-16 of column 9 or step 410 of Fig. 5)** for generating a data transmission request message when a data communication device **(Telephone Devices TD 10 and LAN 12 of Fig. 1 corresponds to data communication device)** connected to the network termination device is sending

data **(Telephone device initiates a call when it is connected to RDT 100; See lines 7-9 of column 9)**; and an xDSL transceiver **(DSL MODEM 120 of Fig. 2)** for transmitting an upstream data frame **(DSL MODEM 120 formats the modulated information into a suitable packet format such as ATM protocol; See lines 54-56 of column 5)** including the generated request message via the data transmission medium **(DSL 24 of Fig. 1)** to a connected line termination device **(HDT 200 of Fig. 1)**.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel at el. (U.S 6,639,913) in view of Kimbrough (U.S 6,781,981).

Regarding claim 10, Frankel discloses the passive signal splitter.

Frankel, however, fails to disclose a low-pass filter for filtering a telephone signal, and a high-pass for filtering an xDSL data signal.

Kimbrough teaches a circuitry including low-pass filter 98 for filtering a telephone signal and band-pass filter 100 for filtering an xDSL data signal to and from customer **(See Fig. 5; Lines 24-34 of column 12)**.

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify Frankel's method to incorporate a setup where the passive signal splitter includes low-pass filter and high-pass filter, the motivation being that using low-pass and high-pass filters would be capable of filtering a telephone signal to and from customer telephone equipment and an xDSL data signal to and from customer digital data equipment.

5. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frankel at el. (U.S 6,639,913) in view of Zuranski at el (U.S 6,445,733).

Regarding claim 14, Frankel discloses the xDSL transceiver.

Frankel, however, fails to disclose an adaptive automatic gain control circuit and an equalizer.

Zuranski teaches a DSL modem including an adaptive automatic gain control circuit and an equalizer **(See AGC circuit 102 and Equalizer 98 in Fig. 3)**.

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify Frankel's method to incorporate a setup where the passive signal splitter includes an adaptive automatic gain control circuit and an equalizer, the motivation being that using an adaptive automatic gain control circuit and an equalizer would be capable of controlling data errors, data transfer rate and filtering signal to and from customer.

Regarding claims 15-17, Frankel discloses the line termination device.

Frankel, however, fails to disclose storing means for storing the AGC coefficients and equalizer coefficients.

Zuranski teaches a circuit that enable to store a number of coefficients including AGC coefficients and equalizer coefficients **(See lines 8-12 of column 9)**.

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify Frankel's method to incorporate a setup where the circuit can store AGC coefficients and equalizer coefficients, the motivation being that using a circuit would be capable of storing data errors and data transfer rate to and from customer.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Atul Suri (US 20020131436), System and method for broadband roaming connectivity using DSL.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SON X. NGUYEN whose telephone number is 571-272-6048. The examiner can normally be reached on 8 AM -5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RICKY NGO
PRIMARY EXAMINER